

BIOLOGY 224
HUMAN ANATOMY AND PHYSIOLOGY - PART II
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Exam 1 Study Guide

Example Multiple choice Questions:

1. The dorsal aorta of the embryo:
 - a) is originally paired.
 - b) is derived from mesoderm plus ectoderm.
 - c) exits the heart and passes cranially.
 - d) is the only aortic component of the early embryo.
 - e) all of the above.

2. Information from ABO blood groups:
 - a) is based on proteins on the surface of red blood cells.
 - b) is necessary to correctly match blood prior to a blood transfusion.
 - c) is only one of many factors involved in determining blood types.
 - d) All of the above.
 - e) None of the above.

3. In each of the pairs of cavities listed below, which is an example of adjacent cavities that are not separated by a structural partition?
 - a) pleural cavity and pelvic cavity
 - b) pelvic cavity and abdominal cavity
 - c) pericardial cavity and pelvic cavity
 - d) thoracic cavity and abdominal cavity

4. The reflection of mesodermally derived tissue around the surface of the lungs is called:
 - a) parietal peritoneum.
 - b) visceral peritoneum.
 - c) pleural pericardium.
 - d) visceral pleura.
 - e) parietal pleura.

5. Which of the following will *not* pierce the diaphragm?
 - a) trachea
 - b) aorta
 - c) inferior vena cava
 - d) esophagus
 - e) sympathetic trunk

6. Which of the following is a consequence of the rapidly developing brain early in embryonic development?
- a) formation of the diaphragm
 - b) movement of the heart from the head to the thoracic region**
 - c) communication of the coelom between the right and left sides of the body
 - d) division between the nasal pharynx and oral pharynx.
 - e) All of the above are a consequence of the rapidly developing brain early in embryonic development.
7. Which of the following are trans-segmental structures or features?
- a) dorsal hollow nerve cord
 - b) distribution of angiogenetic cell clusters.
 - c) gut tube
 - d) coelom
 - e) all of the above.**
8. Which of the following kinds of cells are **not** found in tubes of both the lymphatic system and the cardiovascular system?
- a) macrophages
 - b) T lymphocytes
 - c) red blood cells**
 - d) T lymphocytes
 - e) Hepatocytes
9. Which of the following is **not** a characteristic of hemoglobin?
- a) It makes up the majority of the mass of a red blood cell.
 - b) It binds oxygen (O₂) preferentially over all other gases.**
 - c) It can bind carbon dioxide when it is not binding oxygen.
 - d) It has different forms depending on the ontogenetic (developmental) stage.
 - e) It has different affinities for oxygen depending on the concentration of oxygen in the surrounding environment.
10. The material that is closely applied to the inner body wall musculature of the in the thoracic region is referred to as:
- a) parietal pericardium
 - b) parietal pleura**
 - c) visceral peritoneum
 - d) retroperitoneal
 - e) parietal peritoneum
11. Sympathetic innervation of the heart:
- a) is required for the heart to beat.
 - b) helps to modulate the heart beat.**
 - c) will slow down the heart beat.
 - d) will pass through the celiac ganglion and plexus.
 - e) is facilitated by intercalary discs.

12. Which of the following cannot be described as *paired branches* of the ADULT dorsal aorta?
- common iliac arteries
 - testicular arteries
 - renal arteries
 - phrenic arteries.
 - subclavian arteries**
13. Which of the following is an *unpaired branch* of the dorsal aorta?
- median sacral artery
 - inferior mesenteric artery**
 - renal artery
 - inferior phrenic artery
 - umbilical artery
14. Which of the following dorsal root cranial nerves develops immediately cranial to the otic vesicle?
- occulomotor nerve (III)
 - trigeminal nerve (V)
 - facial nerve (VII)**
 - vestibulocochlear nerve (VIII)
 - glossopharyngeal nerve (IX)
15. The return of lymphatic fluid to the venous circulation from most of the body is:
- at the junction of the right subclavian and right jugular veins.
 - via the thoracic duct.**
 - into the cysterna chyli.
 - at the junction of the right and left brachiocephalic veins.
 - greater when a person is calm and resting.

Short Answer Review Questions (These could be short answer questions, or integrated into an essay.

- Which aortic arch gives rise to the majority of the carotid arteries?
- What is the approximate percentage of plasma in normal, adult human blood?
- What internal structure is found within veins and lymph vessels, but not in arteries?
- Which of the following would you expect to be most variable in their pattern: veins, arteries, or nerves? Why?

Possible Essay questions:

THIS IS BY NO MEANS A COMPLETE LIST, BUT ANY OF THEM COULD BE ON THE EXAM AS AN ESSAY, OR PART OF A MULTIPLE CHOICE QUESTION.

In tabular form, explain the differences between the cardiovascular system and the lymphatic system.

Diagram the pattern of the aortic arches of the human embryo, then show the adult derivatives.

List, from cranial to Caudal, in correct order, all of the paired arteries that branch off of the aorta.

What are the approximate boundaries of the abdominal foregut, midgut, and hindgut? Those regions are served by what: sympathetic nerve, segments for sympathetic nerve, sympathetic ganglion, parasympathetic nerve, abdominal artery, hepatic portal vein tributary.

What are the major sensory structures and nerves associated with the major ectodermal placodes of the head region?

In order from proximal to distal, what are the major branches of the axillary artery? How are they organized?

In order from proximal to distal, what are the major branches of the internal iliac artery?